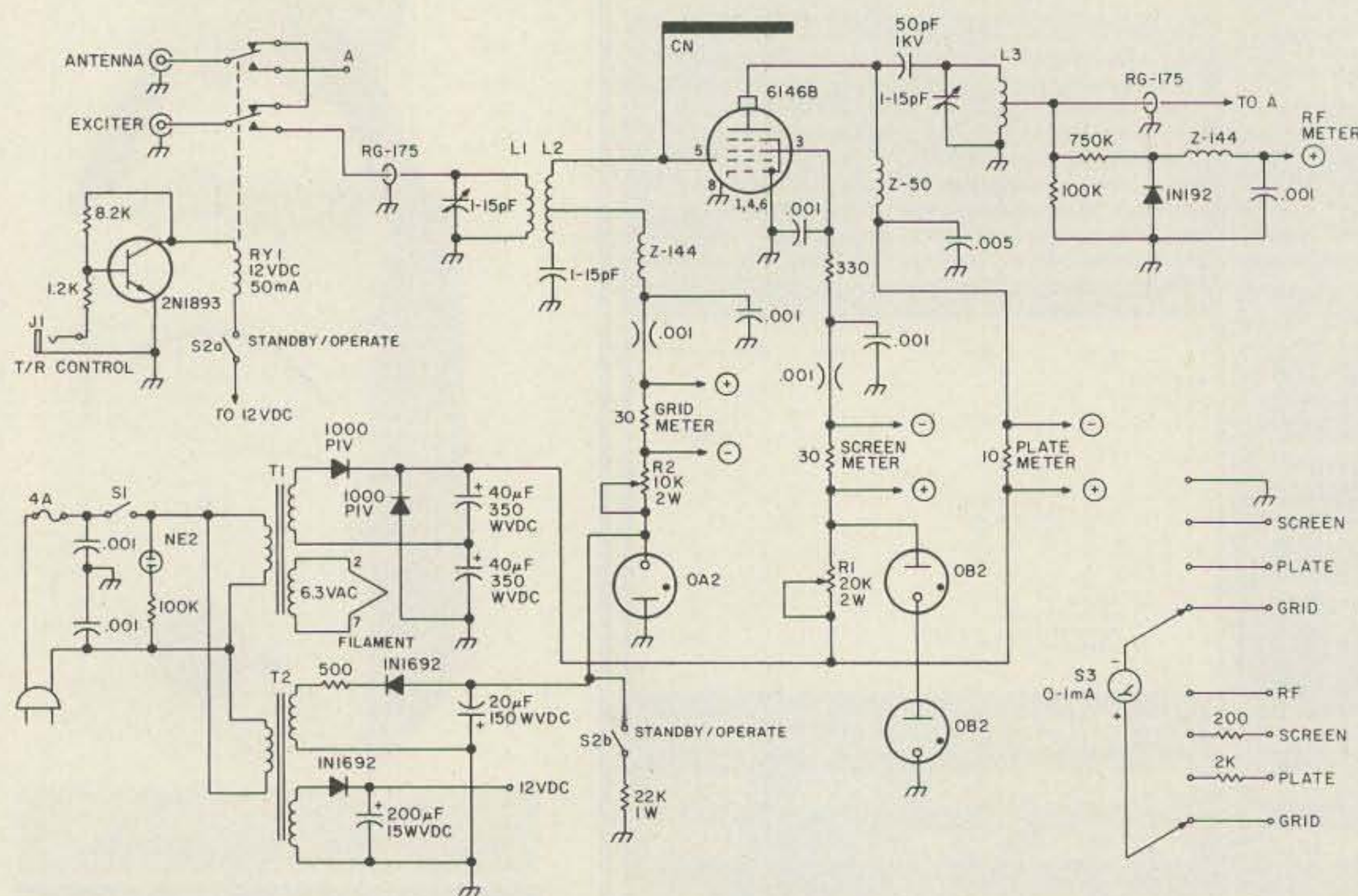


The amplifier described below was built for two meters for the 202. It is hoped that the reader will notice that the basic cir-



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## Circuit

So far, the circuit is straightforward and not unlike other VHF amplifiers. Just another linear amplifier? A unique part of the design, however, is how this amplifier is switched in and out of the transceiver's antenna line. There are several ways that this could be done, like using rf-sensing diodes or tapping a control voltage out of the transceiver. The first method is okay for modes like FM, but things tend to get

There are four wires in the Icom microphone cord, if the mic shield is included. Rearranging these wires as shown in Figs. 2 and 3 will allow the unused side of the microphone PTT switch to be used to control the amplifier. The earphone jack was sacrificed as it is a convenient place to tie the amplifier to

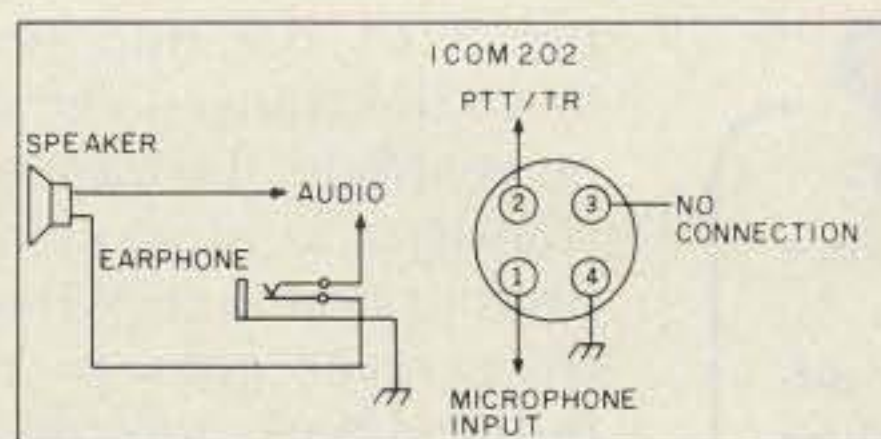


Fig. 2. Unmodified Icom IC-202 transceiver and microphone.

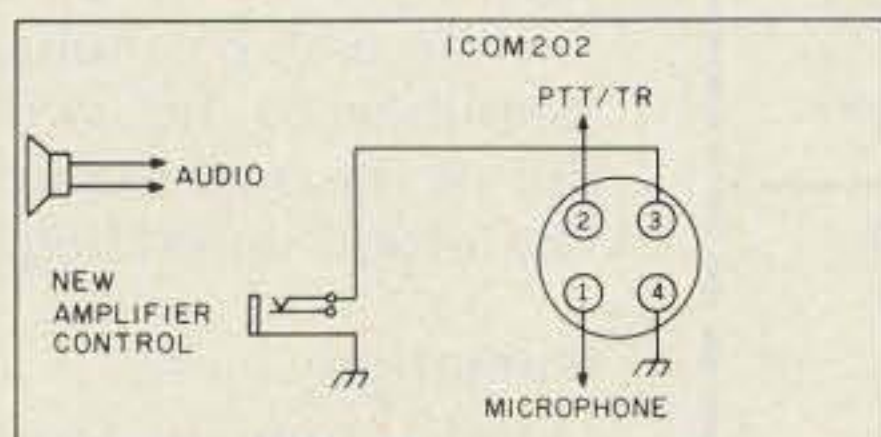
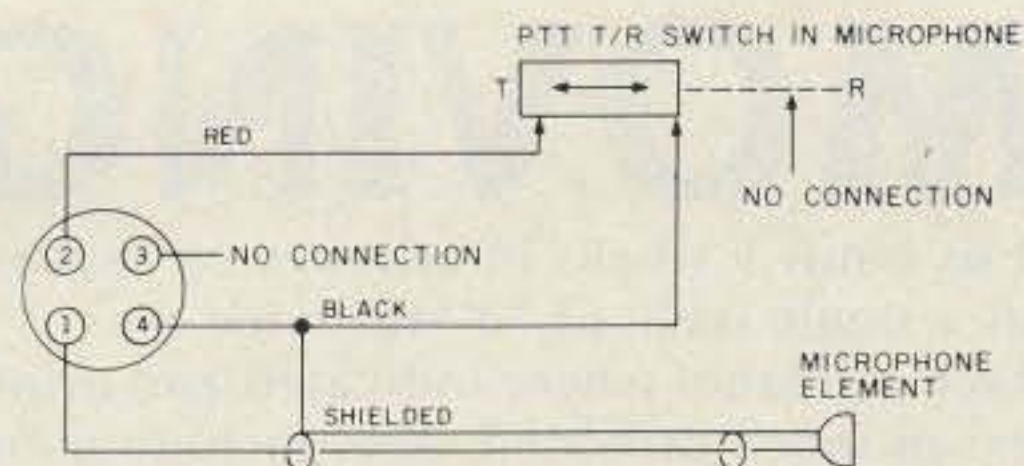


Fig. 3. Modified transceiver and microphone.

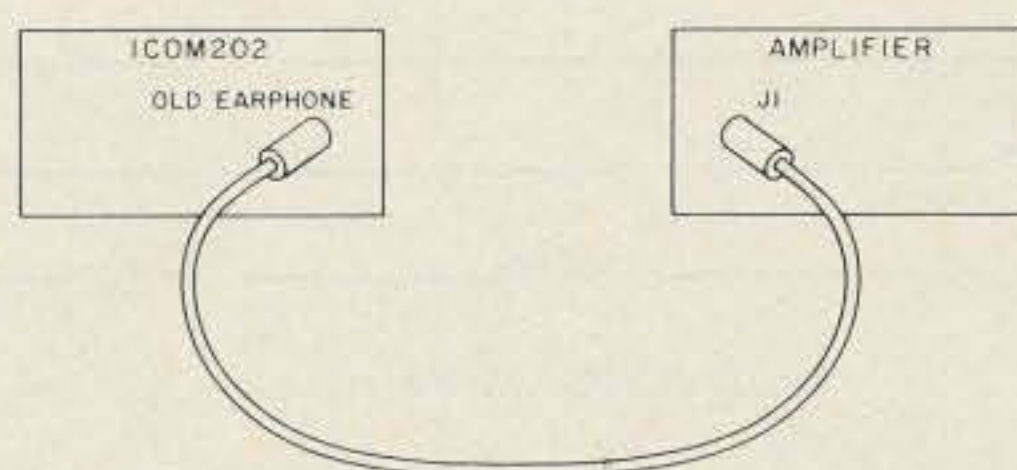
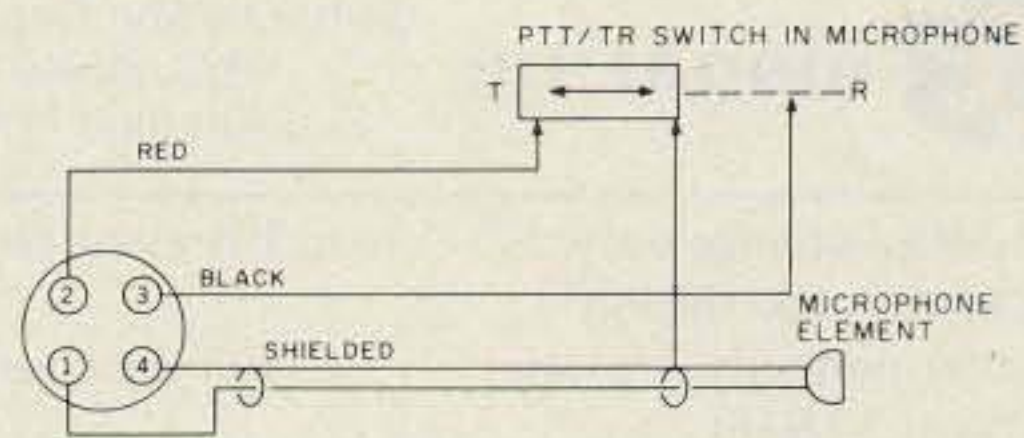
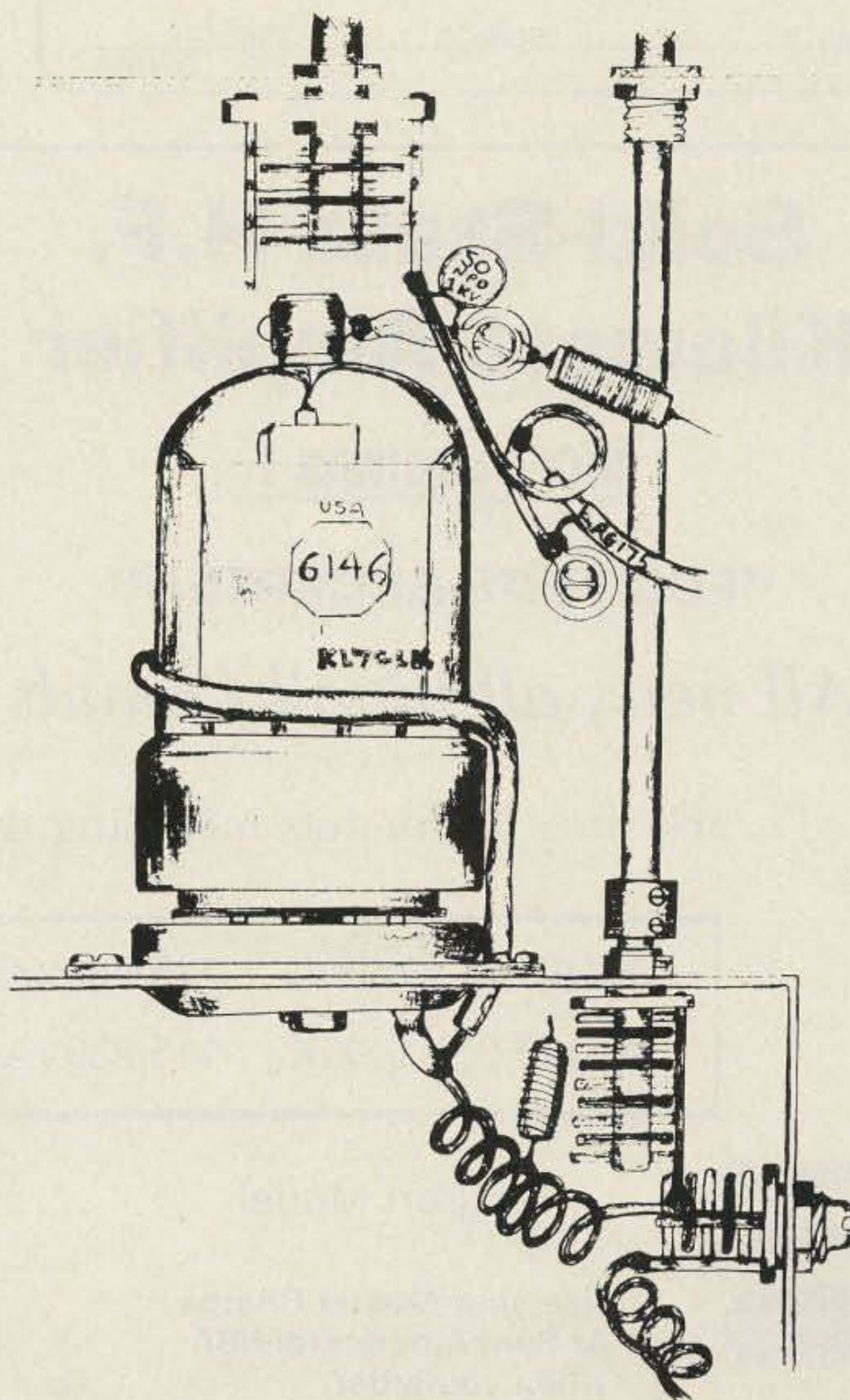
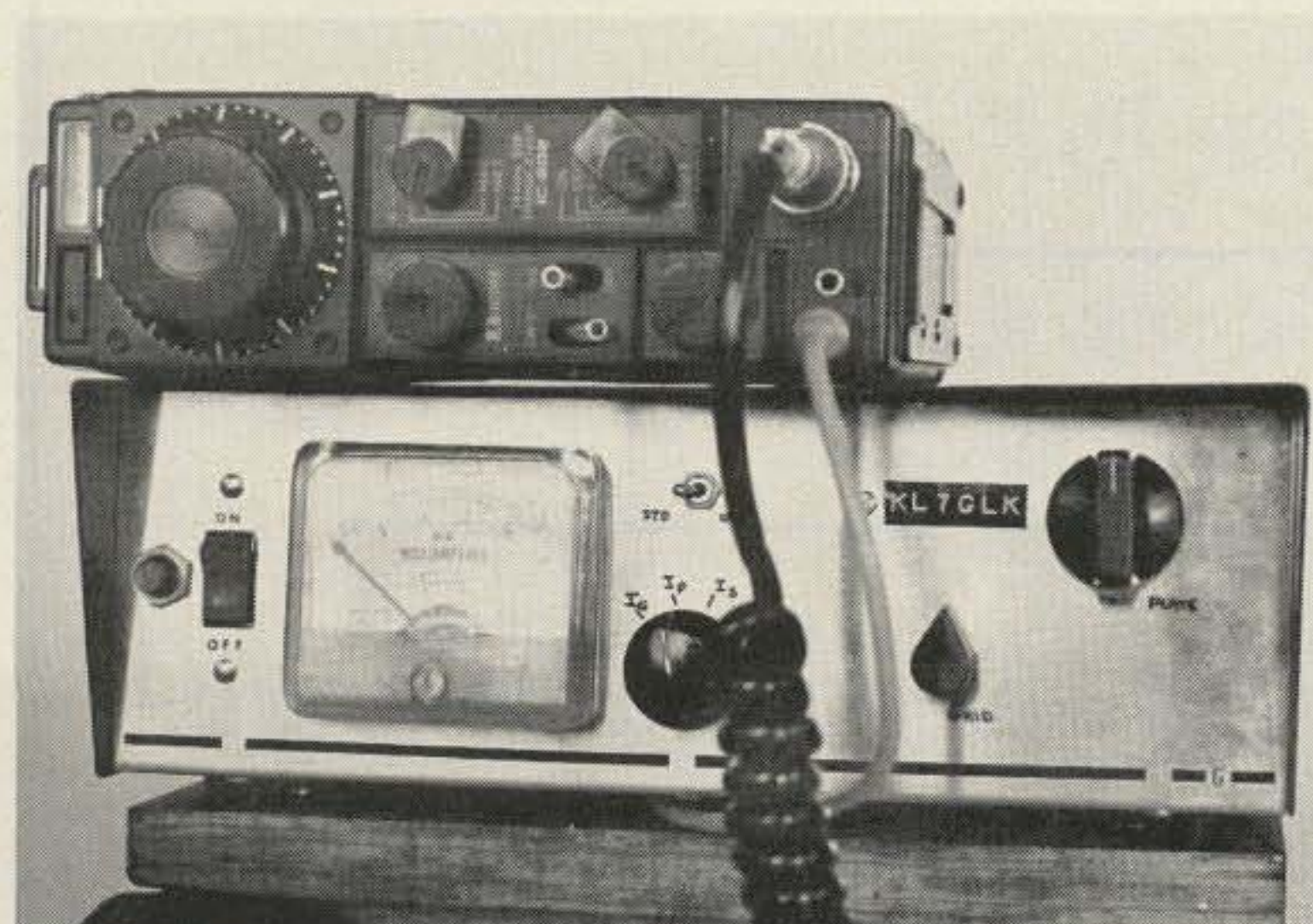


Fig. 4. Hookup between the 202 and the amplifier.



Line drawing detailing component layout.



### Two-meter linear amplifier with the Icom IC-202.



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pin 3 of the mic socket. With the transceiver in Receive mode, the base of the transistor is at ground and doesn't conduct. When the transceiver goes to transmit, the base goes positive and the transistor conducts, closing the T-R relay, RY1. S2 is a DPDT switch which allows the amplifier to be switched out of the antenna line for "barefoot" operation.

## Operation

Initial tune-up operation involves applying power with S2 in Standby. R2 is adjusted to produce 190 V dc at the screen. Without applying a two-meter drive, the amplifier is placed in Operate and R2 adjusted to -50 V dc at the grid. The plate current should idle around 20 mA and the screen at 1-2 mA. Rotate the plate and grid capacitors through their ranges and look for any

change in grid current. If neutralization is necessary, reposition CN to another area around the 6146 until no combination of adjustments to either plate or grid produces any change in grid current. Now apply a two-meter carrier and adjust the grid and plate capacitors for maximum rf output. For linear operation on SSB, back off the grid drive to a point that grid current just starts to be drawn. Repositioning the tap on L3 may be necessary to achieve an optimum loading to a particular antenna.

Once tuned up, the amplifier doesn't require re-tuning over at least a 200-kHz bandspread. The amplifier has given good accounts of itself in the signal reports received. It has proven a good, easy way to extend the communications range of the Icom IC-202. ■

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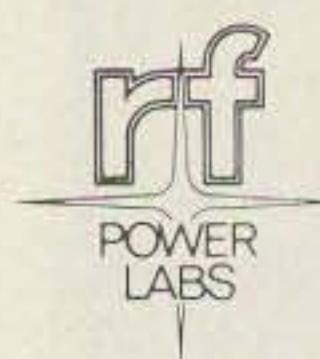
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